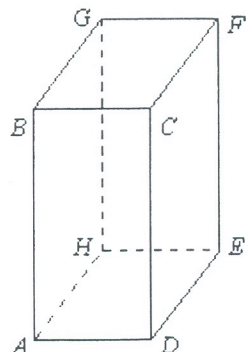


Name: _____

ID: A

Name the faces, edges, and vertices of the polyhedron.

43.



Faces

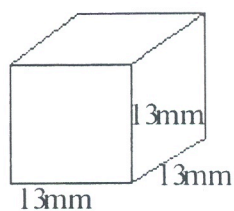
BCFG
ABCD
ABGH

ADEH
EFGH
FLED

T/B
F/B

Find the volume of the solid. Round to the nearest hundredth, if necessary.

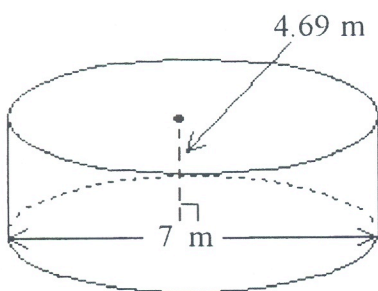
44.



$$\begin{aligned} V &= L \times W \times H \\ &= 13 \times 13 \times 13 \\ &= 2197 \text{ mm}^3 \end{aligned}$$

Find the volume of the cylinder. Use 3.14 for π and round to the nearest hundredth, if necessary.

45.



$$r = \frac{7}{2} = 3.5$$

$$V = \pi r^2 h$$

$$V = \pi (3.5)^2 (4.69)$$

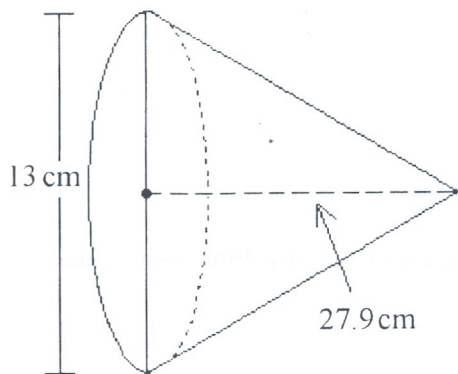
$$V = \cancel{180.5} \\ 180.49 \text{ m}^3$$

Name: _____

ID: A

Find the volume of the cone. Use 3.14 for π and round the answer to the nearest hundredth, if necessary.

46.



$$r = \frac{13}{2} = 6.5$$

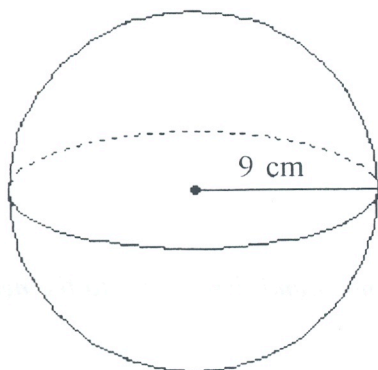
$$V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi (6.5)^2 (27.9)$$

$$V = 1234.41 \text{ cm}^3$$

Find the surface area and volume of the sphere. Round to the nearest hundredth.

47.



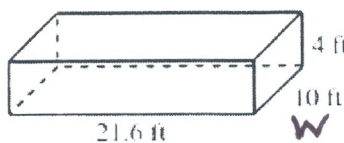
$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (9)^3$$

$$= 3053.62 \text{ cm}^3$$

Draw a net. Then find the surface area. Round to the nearest tenth.

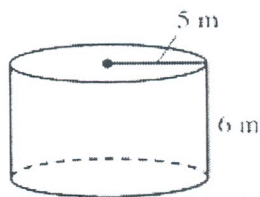
48.



$$\begin{aligned} SA &= 2LW + 2Lh + 2wh \\ &= 2(21.6)(10) + 2(21.6)(4) + 2(10)(4) \\ &= 684.8 \text{ ft}^2 \end{aligned}$$

Draw a net. Then find the surface area. Round to the nearest tenth.

49.



$$SA = 2\pi r^2 + 2\pi rh$$

$$= 2\pi (5)^2 + 2\pi (5)(6)$$

$$= 50\pi + 12\pi$$

$$= 62\pi$$

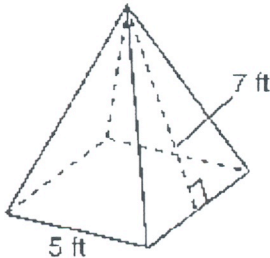
$$= 194.78 \text{ m}^2$$

$$r = 5$$

$$h = 6$$

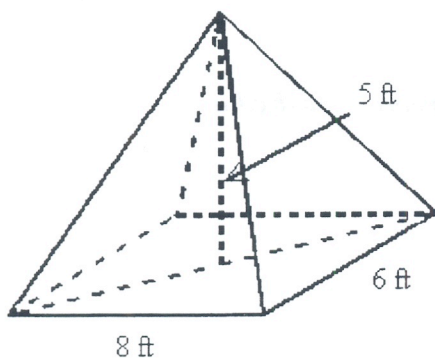
50. The pyramid shown has a square base and a slant height of 7 ft. Find its surface area.

$l = 7$
 $b = 5$



$$\begin{aligned}
 SA &= \text{Area base} + \frac{1}{2}(n)(b)(l) \\
 &= 5 \times 5 + \frac{1}{2}(4)(5)(7) \\
 &= 25 + 70 \\
 &= 95 \text{ ft}^2
 \end{aligned}$$

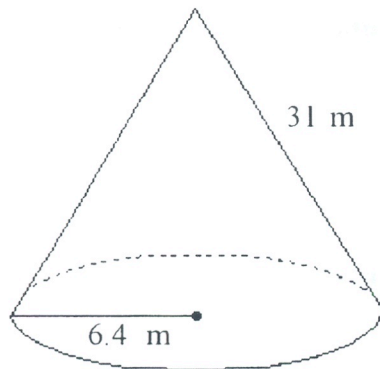
51. The pyramid shown has a rectangular base and faces that are isosceles triangles. Find its volume.



$$\begin{aligned}
 V &= \frac{1}{3}(\text{Area base})h \\
 &= \frac{1}{3}(8 \cdot 6)5 \\
 &= 80 \text{ ft}^3
 \end{aligned}$$

Find the lateral area and the surface area of the cone. Use 3.14 for π and round the answer to the nearest hundredth.

52.



~~$SA = \pi r^2 + 2\pi r l$~~
 ~~$= \pi(6.4)^2 + 2\pi(6.4)(31)$~~
 ~~$= 128.679 + 1246.58$~~
 ~~$SA = 1375.26$~~

$$\begin{aligned}
 SA &= \pi r^2 + 2\pi r l \\
 &= \pi(6.4)^2 + 2\pi(6.4)(31) \\
 &= 128.679 + 1246.58 \\
 SA &= 1375.26
 \end{aligned}$$

53. Find the distance between the points $(1, -8)$ and $(-7, -2)$.

$x_1, y_1 \quad x_2, y_2$

$$d = \sqrt{(-2 - -8)^2 + (-7 - 1)^2}$$

54. Determine the coordinates of the midpoint of \overline{GH} and find the approximate distance GH for the points $G(-6, -7)$ and $H(3, 6)$.

$$\begin{aligned}
 \frac{-6+3}{2} &= \frac{-3}{2} \\
 \frac{-7+6}{2} &= \frac{-1}{2} \\
 \left(\frac{-3}{2}, \frac{-1}{2}\right)
 \end{aligned}$$

$$\begin{aligned}
 d &= \sqrt{(6)^2 + (-8)^2} \\
 d &= 10
 \end{aligned}$$

50. $-3 - -7 = \frac{4}{1} = 4$

55. Find the slope of the line that passes through the points $A(-1, 5)$ and $B(7, 1)$.
 x_1, y_1 x_2, y_2 $m = \frac{1-5}{7-(-1)} = \frac{-4}{8} = -\frac{1}{2}$

56. Find the slope of a line perpendicular to the line containing the points $(3, -7)$ and $(4, -3)$.
 $m = 4$ $m_{\perp} = -\frac{1}{4}$

57. Tell whether the lines through the given points are *parallel*, *perpendicular*, or *neither*. Explain.

Line 1: $(2, 2), (-4, 5)$

$$\frac{5-2}{-4-2} = \frac{3}{-6} = -\frac{1}{2}$$

Line 2: $(4, -9), (-6, -4)$

$$\frac{-4-(-9)}{-6-4} = \frac{5}{-10} = -\frac{1}{2}$$

neither

58. Write an equation for the line passing through the point $(-3, -5)$ that has a slope of -5 .

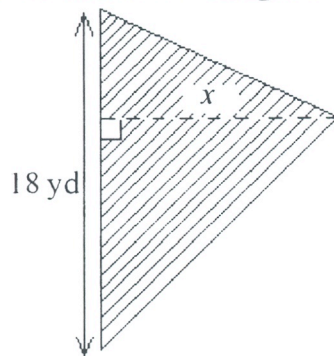
$$y - (-5) = -5(x - (-3))$$

$$y + 5 = -5x - 15 \quad y = -5x - 20$$

59. $M(4, 4)$ is the midpoint of \overline{RS} . If S has coordinates $(9, 13)$, find the coordinates of R .
 $(-1, -5)$

60. Find the radius of the circle with a circumference of 39 yards. Use 3.14 for π and round the answer to the nearest tenth.
 $39 = 2(3.14)r$ $\frac{39}{6.28} = \frac{6.28r}{6.28}$ $r = 6.21$

61. If the area of the triangle is 117 square yards, find the value of x .



$$A = \frac{1}{2}bh$$

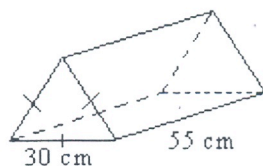
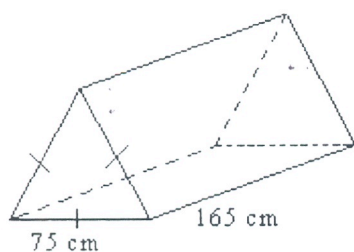
$$117 = \frac{1}{2}(18)(h)$$

$$\frac{117}{9} = \frac{9h}{9}$$

$$h = 13$$

Determine whether the pair of solids is similar. Write yes or no.

62.



$$\frac{30}{75} = \frac{6}{15} = \frac{2}{5} \quad \frac{55}{165} = \frac{11}{33} = \frac{1}{3}$$

not similar

59. $M(4, 4)$
 $E(9, 13)$
 $R(-1, -5)$

$$\frac{4}{1} = \frac{y+13}{2}$$

$$8 = y + 13$$

$$y = -5$$

$$\frac{4}{1} = \frac{y+9}{2}$$

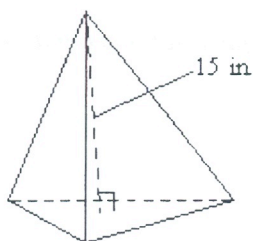
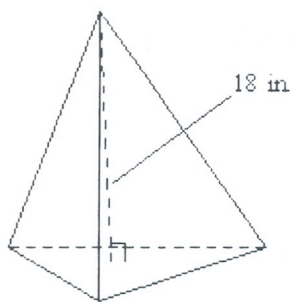
$$8 = y + 9$$

$$y = -1$$

$$(-1, -5)$$

For the pair of similar solids, find the scale factor of the solid on the left to the solid on the right. Then find the ratios of the surface areas and the volumes.

63.



$$\frac{18}{15} = \frac{6}{5}$$

64. The areas of corresponding faces of two similar triangular prisms are 49 cm^2 and 25 cm^2 . What is the ratio of the corresponding side lengths? of the perimeters of the corresponding faces? of the volumes?

65. If the ratio of the radii of two spheres is 8:7, what is the ratio of the volumes of the two spheres?

(64)

$$\frac{49}{25} = \frac{a^2}{b^2}$$

$$a = 7$$

$$b = 5$$

$$\text{sides } \frac{7}{5}$$

$$\text{perimeter } \frac{7}{5}$$

$$\text{area } \frac{49}{25}$$

$$\text{volume } \frac{343}{125}$$

(65)

$$\frac{a}{b} = \frac{8}{7}$$

$$\frac{a^3}{b^3} = \frac{8^3}{7^3}$$

$$\text{volume ratio} = \frac{512}{343}$$

Geometry Final Review Part 2

- 1 The area of a trapezoid is 65mm^2 , the top is 9mm long, the height is 11mm long. Find the base of the trapezoid.

①

$$A = \frac{1}{2}h(b_1 + b_2)$$

$$65 = \frac{1}{2}(11)(b + 9)$$

$$65 = 5.5(b + 9)$$

$$65 = 5.5b + 49.5$$

$$49.5$$

$$\frac{15.5}{5.5} = \frac{5.5b}{5.5}$$

$$b = 2.82$$

②

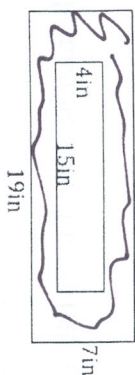
$$A = b \cdot h$$

$$\frac{15}{5} = \frac{5h}{5}$$

$$h = 3$$

- 2 The area of a parallelogram is 15in^2 , the base is 5in long. Find its height.

- 3 Find the shaded area.



③

$$A_1 - A_2$$

$$19(7) - 15(4)$$

$$133 - 60$$

$$A = 73\text{in}^2$$

④

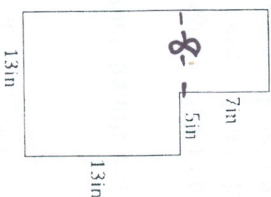
$$A_1 + A_2$$

$$13(13) + 8(7)$$

$$169 + 56$$

$$225\text{in}^2$$

- 4 Find the area of the composite figure.



5. Describe what happens to the volume of a cylinder if its radius is doubled while its height is halved.

The volume is

doubles

$$\begin{aligned} V &= \pi r^2 h \\ &= \pi (2^2) \left(\frac{1}{2}\right) \\ &= \textcircled{2} \pi \end{aligned}$$

6. For which length and width is the perimeter maximized for a figure with an area of 24 square units?

$$P = 2L + 2W$$

a. Length = 3, width = 8

b. Length = 2, width = 12

c. Length = 1, width = 24

d. Length = 6, width = 4

$$16 + 16 = 32$$

$$24 + 4 = 28$$

$$48 + 2 = 50$$

$$12 + 8 = 20$$

$$r = 5$$

7. To the nearest cubic foot, a cylindrical natural gas storage tank with a diameter of 10 feet holds 2260 cubic feet of gas.

4 times more

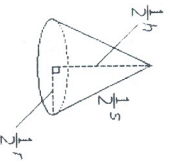
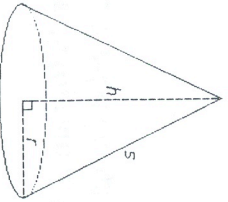
To the nearest cubic foot, what is the approximate volume of an equally tall tank if it has a diameter of 20 feet?

$$\begin{aligned} V &= \pi r^2 h \\ 2260 &= \pi (5)^2 h \end{aligned}$$

$$r = 10$$

$$\begin{aligned} V &= \pi r^2 h \\ &= \pi (2)^2 (10) \\ &= \textcircled{4} \pi \end{aligned}$$

8.



⑧

$$SA = \pi r^2 + \pi r L$$

$$= \pi \left(\frac{1}{2}\right)^2 r^2 + \pi \left(\frac{1}{2}\right) \left(\frac{1}{2} L\right)$$

$$\frac{1}{4}$$

If the larger cone has a surface area of 602.88 cm², what is the surface area of the smaller cone?

$$\frac{602.88}{4} = 150.72$$

$$602.88 = \pi r^2 + \pi r L$$

$$602.88 = \pi r^2 + \pi r L$$

$$602.88 \left(\frac{1}{4}\right) = 150.72$$

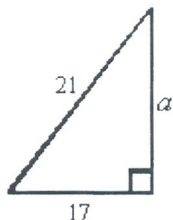
GEOMETRY FINAL REVIEW PART B

12-13

Name: _____

ID: A

54. Find the length of the leg of this right triangle. Give an approximation to 3 decimal places.



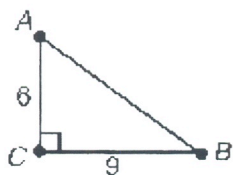
$$\begin{aligned} c^2 &= a^2 + b^2 \\ 21^2 &= a^2 + 17^2 \\ 441 &= a^2 + 289 \\ -289 & \quad -289 \\ \hline a^2 &= 152 \end{aligned}$$

$$a = \sqrt{152}$$

$$a = 12.329$$

- a. 12.329 b. 11.916 c. 12.650 d. 27.019

55. $\triangle ABC$ is a right triangle. $AB =$ _____.



$$c^2 = a^2 + b^2$$

$$c^2 = 6^2 + 9^2$$

$$c^2 = 36 + 81$$

$$c^2 = 117$$

$$c = \sqrt{117}$$

$$c = \sqrt{117}$$

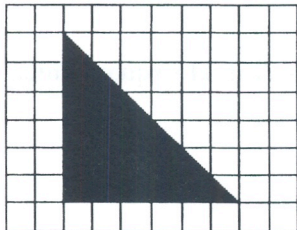
$$c = \sqrt{9 \cdot 13}$$

$$c = 3\sqrt{13}$$

- a. $3\sqrt{13}$ b. $3\sqrt{6}$ c. $3\sqrt{5}$ d. 117

Estimate the area of the polygon.

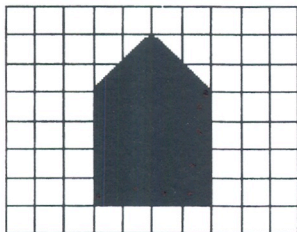
- 56.



$$\frac{1}{2}(6 \times 6) = 18$$

- a. 25 units² b. 21 units² c. 18 units² d. 15 units²

- 57.

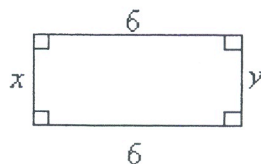
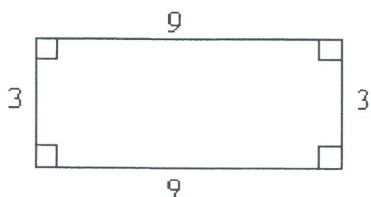


$$\begin{aligned} 16 + \frac{1}{2}(4)(2) \\ 16 + 4 \end{aligned}$$



- a. 16 units² b. 32 units² c. 24 units² d. 20 units²

58. The polygons below are similar, but not necessarily drawn to scale. Find the values of x and y .



$$\frac{3}{x} = \frac{9}{6}$$

$$18 = 9x$$

$$\frac{18}{9} = \frac{9}{9}$$

$$x = 2$$

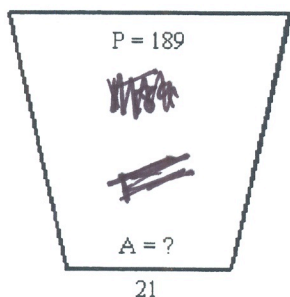
$$\frac{3}{y} = \frac{9}{6}$$

$$18 = 9y$$

$$\frac{18}{9} = \frac{9}{9}$$

$$y = 2$$

59. The figures are similar. Find the missing values.



Perimeter

$$\frac{21}{8} = \frac{189}{x}$$

$$21x = 1512$$

$$x = 72$$

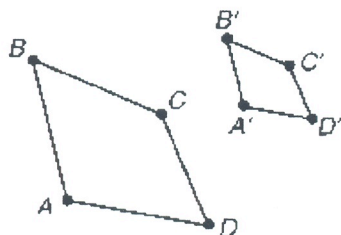
Area

$$\frac{21^2}{8^2} = \frac{x}{320}$$

$$\frac{14120}{64} = \frac{64x}{64}$$

$$x = 2205$$

60. Quadrilaterals $ABCD$ and $A'B'C'D'$ are similar with $\frac{AB}{A'B'} = \frac{5}{2}$. If the area of $ABCD$ is 115 square units, what is the area of $A'B'C'D'$?



$$\frac{25}{2} = \frac{115}{x}$$

$$25x = 230$$

$$x = 9.2$$

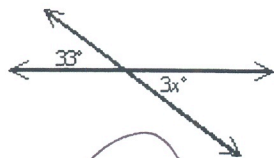
$$\frac{25}{2} = \frac{115}{x}$$

$$\frac{25x}{25} = \frac{230}{25}$$

$$x = 9.2 \text{ units}$$

Find the value of x in the figure.

- 61.

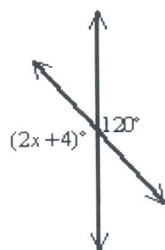


- a. 36 b. 11 c. 30 d. 10

$$\frac{33}{3} = \frac{3x}{3}$$

$$x = 11$$

62.

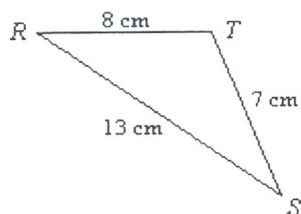


$$\begin{array}{r} 2x + 4 = 120 \\ -4 \quad -4 \\ \hline 2x = 116 \\ \frac{2x}{2} = \frac{116}{2} \\ x = 58 \end{array}$$

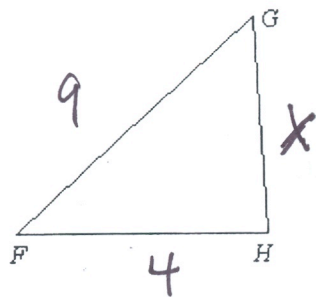
- a. 62 b. 124 c. 120 d. 58

List the angles in order from least to greatest measure.

63.

 $\angle R, \angle S, \angle T$

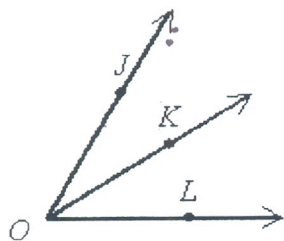
- a.
- $\angle T, \angle S, \angle R$
- b.
- $\angle S, \angle T, \angle R$
- c.
- $\angle S, \angle R, \angle T$
- d.
- $\angle R, \angle S, \angle T$



$5 < x < 13$

64. Determine the range of possible values for
- x
- if
- $HF = 4$
- ,
- $GH = x$
- , and
- $GF = 9$
- .
-
- a.
- $9 < x < 4$
- b.
- $4 < x < 9$
- c.
- $13 < x < 5$
- d.
- $5 < x < 13$

65. If
- $m\angle JOK = 28^\circ$
- and
- $m\angle JOL = 58^\circ$
- , then what is the measure of
- $\angle KOL$
- ?



$58 - 28 = 30^\circ$